Solute−Solvent Interactions in 2,4-Dihydroxyacetophenone Isonicotinoylhydrazone Solutions in *N,N*-Dimethylformamide and Dimethyl Sulfoxide at 298−313 K on Ultrasonic and Viscometric Data[1]

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Abstract—The speed of sound (u), density (ρ), and viscosity (η) of 2,4-dihydroxyacetophenone isonicoti-noylhydrazone (DHAIH) have been measured in *N,N*-dimethyl formamide and dimethyl sulfoxide at equi-distance temperatures 298.15, 303.15, 308.15, and 313.15 K. These data were used to calculate some important ultrasonic and thermodynamic parameters such as apparent molar volume (V_ϕ), apparent molar compress-ibility (K_ϕ), partial molar volume (V_ϕ^0) and partial molar compressibility (K_ϕ^0), were estimated by using the values of (V_ϕ^0) and (K_ϕ), at infinite dilution. Partial molar expansion at infinite dilution, (ϕ_E^0) has also been calculated from temperature dependence of partial molar volume V_ϕ^0. The viscosity data have been analyzed using the Jones−Dole equation, and the viscosity, *B* coefficients are calculated. The activation free energy has been calculated from *B* coefficients and partial molar volume data. The results have been discussed in the term of solute−solvent interaction occurring in solutions and it was found that DHAIH acts as a structure maker in present systems.